AN EXPERIMENTAL APPROACH TO ASSESSING THE EFFECTS OF MINING SUBSIDENCE ON A FLOOD MEADOW COMMUNITY[1]

by

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Abstract. The Lower Derwent Valley (LDV) is a candidate Special Area of Conservation (SAC) under the provisions of the UK 1994 Conservation Regulations for its internationally important *Alopecurus pratense-Sanguisorba officinalis* flood meadow vegetation. Mining from RJB's Selby Complex (UK's largest mine) has taken place around and under the LDV since the 1980s. Under the provisions of the Regulations the potential effects of mining subsidence have been recently reviewed (see paper offered by Humphries, Wessemann and Benyon). From field data and models it has been predicted that the resulting small amount of subsidence is unlikely to have a deleterious effect on the composition and extent of the key community. Whilst the proposed long-term monitoring will verify the prediction, it will be some years before the results will be available. In order to identify incipient changes in grassland community and to implement any necessary mitigation measures before significant changes occur, a field experiment was set up in late 1996 to assess the effects of increased wetness and inundation which might be induced by subsidence. This involved the transplantation of turves from the different grassland communities within and along a previously defined gradient of relative wetness and inundation. The response of the communities to the different conditions is being monitored. The background studies and the results of the transplantation so far will be presented.

Additional Key Words: turf transplant, soil hydrology, inundation, subsidence modeling

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